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A sedge, grass and rush inventory of seven parks in the National Capital Region

Natural Resource Technical Report NPS/NCRN/NRTR—2008/090

ON THE COVER
Juncus torreyi and *Juncus effusus* in a wetland along the Shenandoah River in Harpers Ferry National Historical Park
Photograph by: Samantha Tessel

A sedge, grass and rush inventory of seven parks in the National Capital Region

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Introduction

Vascular plant inventories have been completed for many National Parks in the United States. Although the inventories are thorough, sedges, grasses and rushes are often underrepresented owing to difficulties in identifying species and in timing surveys to capture flowering, a must for many species that are hard to identify from vegetative characteristics. Information on graminoids is important, however, in documenting trends in the flora and fauna, such as the presence of rare, threatened or endangered species that are in need of special protection, and in understanding and maintaining the natural goods and services National Parks can provide. Therefore, the primary goal of this project was to conduct an inventory of grasses, sedges and rushes at Catoctin Mountain Park, Harpers Ferry National Historical Park, National Capital Parks East (excluding Ft. Washington and Piscataway), Chesapeake and Ohio Canal National Historical Park, Rock Creek Park, Manassas National Battlefield Park, and Great Falls Park of the George Washington Memorial Parkway. In doing so, the inventory will provide park managers, NPS policy-makers, and the public with scientifically sound information on the nature and status of some of the biological resources that the National Parks within the National Capital Region support.

Methods

Site Selection

Sampling stations were placed in different habitat strata at each park. Habitat strata were based on land cover (e.g., forest, grassland) and geology identified using ArcView layers supplied by the National Parks that were surveyed. Effort was based on survey time and not survey area. Thus, the number of stations and walk-throughs per National Park varied and depended on species accumulation curves that assessed completeness (>90%) of each inventory through time.

Graminoid Surveys

The project consisted of three field seasons; the first two field seasons (2005, 2006) documented the majority of species expected to occur in the different parks. The third field season (2007) focused on revisiting parks that seemed to have incomplete species lists based on expert opinion (Chris Frye) and statistics (species accumulation curves). Stations were visited across seasons to account for different flowering times of species.

Plots are often used as a method to judge unit effort in space, which can then be used to evaluate inventory completeness. However, plots are not always the most effective sampling strategy, especially when specific groups of species are inventoried, such as sedges, grasses, and rushes, which are generally habitat specialists and may be clumped in distribution. We therefore used time as the unit of effort, where the rate of new species encounters should decline as time passes and the inventories near completion.

Each station was searched for at least 15 minutes. The search was a random walk around the station and was only bounded by natural features. Once a species was encountered, the stopwatch was stopped to

allow time for identification. Hence, the search time is only a fraction of the actual time spent at each station (5-10% of total time). At species rich sites, when 15 minutes search time was reached and new species were still encountered at a faster rate than 1 species per 3 minutes, time was added until no new species were encountered within a 3-minute period. If species could not be identified in the field, a voucher was collected (if population size allowed), pressed and later identified in the laboratory. Species were also identified in walkthroughs, and search time recorded. Additional species not found in this study but documented by vouchers or other published studies were also included as they represent previous search efforts. We did not include species that are documented in the NPSpecies database but that are not reported in any published reports as the quality of the data is uncertain.

In addition to species presence, we collected additional information at each sampling station:
1. NPS unit (CATO; CHOH, HAFE, GWMP, NACE, MANA, ROCR)
2. Date
3. Survey personnel
4. Station
5. Number of sampling periods
6. Location: Easting, Northing, Zone, elevation
7. Slope (class 1: <5°; class 2: 5-15°; class 3: 16-35°; class 4: >35°)
8. Aspect (8 cardinal directions)
9. Percent cover (class 1: >75% overstory cover; class 2: patchy; class 3: <25% cover)
10. Cowardin (upland, riparian, palustrine)
11. Disturbance (Low - no current or adjoining disturbance or road; moderate - adjoining field or mowed area; disturbed - mowed underneath closed canopy, heavily disturbed understory; highly disturbed - mowed or grazed, plowed, pavement or buildings present)

To evaluate completeness of the inventory, we developed species accumulation curves, using PCOrd software (McCune and Grace 2002) for each park (Figure 1). These curves use simulations to select "plots" for the analysis at random and allows generation of a confidence interval around a mean for any given sampling effort. "Plots" are defined as 15-minute search intervals, such that a plot might span two sampling stations. We used first and second order jackknife estimates to estimate the number of total species expected to occur in each park and then calculated completeness of the inventories at each Park by comparing observed species richness with expected species richness (Table 1). Each park was searched until the number of graminoid species found was approximately 90% of the number of species estimated to be present by species accumulation curves. Total search time varied as a function of park size and graminoid diversity (Table 1).

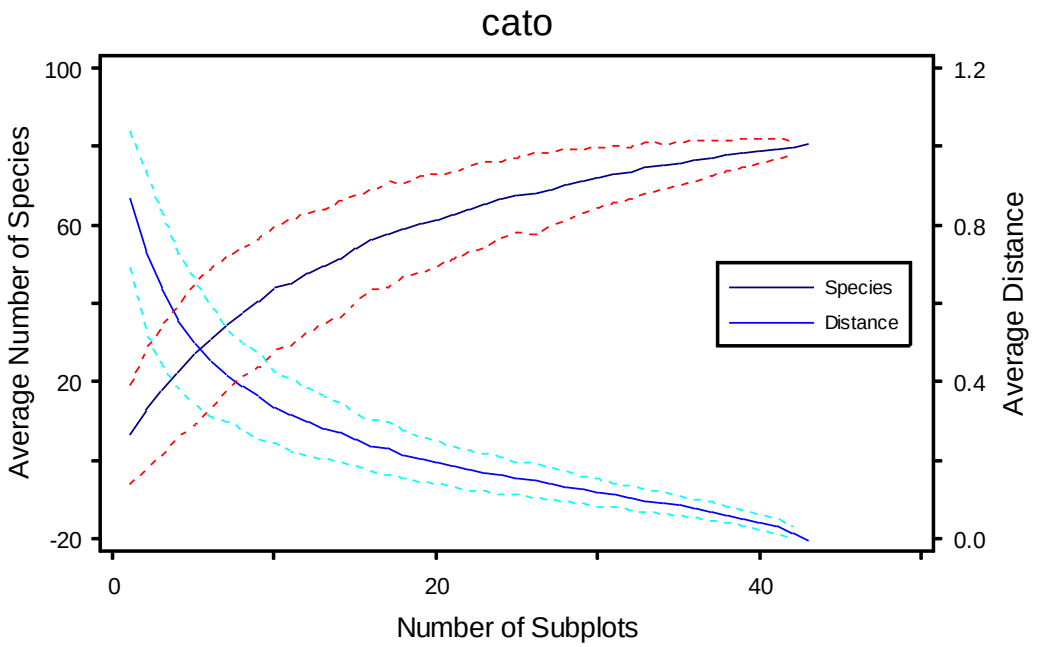

Figure 1. Species accumulation curve for Catoctin Mountain Park (CATO). The curves for the other 6 Parks are similar to the one presented for CATO and are therefore not shown here.

Results and Discussion

Species accumulation curves are usually developed on plot data that were gathered in homogeneous habitats, which is not the case for some of the parks supporting a variety of habitats (e.g., Chesapeake and Ohio Canal National Historical Park, National Capital Parks East and Manassas National Battlefield Park) and results in a higher variability in first and second order jackknife estimates. Even so, the first and second order jackknife estimates indicate that the graminoid inventories of the seven parks are at least 90% complete (Table 1). With additional untimed walkthroughs and review of existing species lists or vouchers for different National Parks, some park inventories statistically may be more than 100% complete, due to increased representation of rare species.

The grass, sedge and rush inventory of the 7 National Parks within the National Capital Region yielded 277 unique species from a total of 2875 positive identifications that were made across all National Parks. The most species were recorded for the Chesapeake and Ohio Canal National Historical Park (181 species), Great Falls Park of the George Washington Memorial Parkway (168 species) and National Capital Parks East (131 species; Table 1). The Manassas National Battlefield Park inventory accumulated 119 species, Harpers Ferry National Historical Park 106 species, Catoctin Mountain Park 98 species, and Rock Creek Park 68 species (Table 1). Species lists for the 7 parks can be found in the Appendix to this report.

Table 1. Summary statistics of the graminoid inventories at the 7 National Parks that were inventoried. First and second number in the completeness column reflect results generated from the first order jackknife (first number) versus the second order jackknife (second number). Search time includes the actual time spent searching for species and does not include the time spent identifying the species.

Park	# species	Total timed search (minutes)	completeness (%)
CATO	98	645	94 / 89
CHOH	181	960	98 / 85
GWMP	168	585	116 / 113
HAFE	106	345	105 / 86
MANA	119	600	103 / 89
NACE	131	285	95 / 84
ROCR	68	585	100/ 93

Ninety-three of the inventoried species were unique to a particular National Park; however, most species occurred in at least two National Parks, and some (33 species) in all 7 National Parks. *Microstegium vimineum* was sampled the most with 112 positive identifications across all 7 National Parks, followed by *Festuca subverticillata* (102 identifications), *Carex blanda* (92 identifications), *Juncus tenuis* (81 identifications) and *Poa pratensis* (80 identifications). Thus, many of the species sampled are common and widespread across the region; however, many species were sampled just once because they are habitat specialists or are rare.

Several state-listed graminoid species were found or recorded as present during the course of the inventory in all National Parks except National Capital Parks East. Great Falls Park of the George Washington Memorial Parkway and the Chesapeake Ohio Canal National Historical Park support the most species of conservation concern as these National Parks support diverse and unique habitats along the Potomac River Gorge. Though most of the listed species are globally stable, many are state listed as rare, threatened, or endangered in Maryland, Virginia, or West Virginia (global and state ranks shown in Table 2). Graminoid species of note in the 7 National Parks are:

1. Catoctin Mountain Park: Maryland watch-listed *Carex albursina*, state rare *Trichophorum planifolium*, and state rare/watch listed *Carex sparganioides*.
2. Manassas National Battlefield Park: Virginia watch-listed *Carex bushii*, and *Carex mesochorea* (currently unranked in Virginia).
3. Harpers Ferry National Historical Park spans parts of Maryland, Virginia, and West Virginia: West Virginia state watch-listed taxa *Bouteloua curtipendula* and *Carex shortiana*, West Virginia state rare/watch listed *Carex bushii*, and West Virginia state rare *Juncus torreyi*.
4. Rock Creek Park: District of Columbia rare taxa *Carex hirtifolia* and *Melica mutica.*
5. The botanically diverse Great Falls Park of the George Washington Memorial Parkway in Virginia contains many notable species, including the Virginia state watch-listed species *Carex careyana*, *Carex shortiana*, and *Diarrhena Americana*, and state rare species *Carex davisii Carex straminea*, *Eleocharis compressa*, and *Spartina pectinata*.
6. The Chesapeake and Ohio Canal National Historical Park is located along most of the Potomac River in Maryland, including the botanically diverse Potomac River Gorge, and contains many state rare species including *Carex careyana, Carex davisii, Carex emoryi, Carex hitchcockiana, Carex planispicata, Carex shortiana, Carex sparganioides, Diarrhena americana*, and *Melica mutica*.
7. No state-listed graminoid species were recorded for National Capital Parks East.

Table 2. State and global rankings of species of concern found in parks of the National Capital Region. S1/G1 = highly rare/ critically imperiled, S2/G2 = rare/imperiled, S3/G3 = watch list/vulnerable, S4/G4 = apparently secure, S5/G5 = secure. Rankings from *www.natureserve.org.*

Species	MD	WV	VA	Global	Found
Bouteloua curtipendula	S2	S3		G5	HAFE (WV)
Carex aggregata		S1	S4?	G5	everywhere but ROCR
Carex albursina	S3	S5	S4?	G5	CATO, CHOH
Carex brevior	S2?		S4?	G5?	CHOH (Lea), NACE (herbarium)
Carex bushii	S4	S2S3	S3	G4	CHOH (Lea), NACE, HAFE(WV), MANA
Carex careyana	S1	S1	S3	G5	CHOH (Lea), GRFA
Carex comosa		S2		G5	CHOH
Carex cristatella	SU	S4	S2	G5	CHOH, GRFA
Carex davisii	S1	S1	S1	G4	GRFA
Carex emoryi	S1S2	S2	S5?	G5	CHOH (Lea), GRFA
Carex hirtifolia	S3	S2	S4	G5	CHOH (Lea), ROCR, GRFA
Carex hitchcockiana	S1	S3	S3S4	G5	CHOH (Lea)
Carex longii		S1	S5?	G5	NACE, CATO
Carex lupuliformis	S1?	S2	S2	G4	CHOH (Lea)
Carex mesochorea	S4	S2		G4G5	MANA
Carex oligosperma		S1		G5?	CHOH
Carex planispicata	S1S2		S4	G4Q	CHOH (Lea), GRFA
Carex shortiana	S2	S3	S3	G5	HAFE (WV), GRFA, CHOH
Carex sparganioides	S1S2	S4	S4	G5	HAFE, CATO, CHOH, GRFA
Carex striatula	S3	S2	S4S5	G4G5	CHOH
Carex straminea	S1S2	S2	S1	G5	GRFA
Carex styloflexa	S4	S1	S4?	G4G5	GRFA, CHOH
Carex tenera	SH		S1?	G5	CHOH (Lea)
Carex woodii	S4	S2	S4	G4	CHOH (Lea)
Cyperus lancastriensis	SU	S3		G5	GRFA
Cyperus squarrosus	SU	S3	S3S4	G5	CHOH, GRFA, HAFE,
Dichanthelium laxiflorum	SU	S4	S5	G5	MANA, HAFE, CHOH, CATO, GRFA
Dichanthelium oligosanthes	S2S3	S1	S4	G5	CHOH, GRFA
Eleocharis compressa	S1	S2	S2	G4	GRFA
Juncus brachycarpus	SU	SH	S4	G4G5	HAFE, CHOH
Juncus torreyi	S1	S2	S2	G5	HAFE (WV)
Melica mutica	S1	S2		G5	GRFA, MANA, CHOH, ROCR
Paspalum fluitans	S1	S1		G5	GRFA
Rhynchospora recognita		S2		G5?	GRFA
Scirpus pendulus	S3	S4		G5	CHOH, MANA, GRFA, NACE
Scleria oligantha		S1		G5	CHOH
Scleria pauciflora	S3	S1		G5	GRFA
Scleria triglomerata	S1S2	S2		G5	GRFA
Spartina pectinata		S4	S2	G5	GRFA
Trichophorum planifolium	S2S3	S1		G4G5	GRFA, CATO

Out of the 277 species that were sampled across all National Parks, 53 species were not native ("introduced") to the region. The urban parks (National Capital Parks East and Rock Creek Park) supported the greatest proportion of introduced species probably owing to urban landscaping with non-native lawn grasses. One out of approximately 5 species were non-native in National Parks located within an agricultural matrix (Manassas National Battlefield Park, Harpers Ferry National Historical Park, and Catoctin Mountain Park). The National Parks with the lowest proportion of introduced species are Chesapeake and Ohio National Historical Park and George Washington Memorial Parkway (Great Falls). These National Parks support the highest number of native species, especially within the unique and diverse areas along the Potomac River Gorge, increasing the number of native species relative to introduced species. The introduced species that is of the greatest management concern is *Microstegium vimineum*, which is an invasive grass and occurs in all of the National parks we sampled.

Table 3. Proportion of introduced species within each National Park. CATO = Catoctin Mountain Park, CHOH = Chesapeake and Ohio National Historical Park, GWMP = George Washington Memorial Parkway (Great Falls), HAFE – Harpers Ferry National Historical Park, MANA = Manassas National Battlefield Park, NACE = National Capital Parks East, ROCR = Rock Creek Park.

Park	# total species	# introduced species	proportion introduced species
CATO	98	20	0.20
CHOH	181	26	0.14
GWMP	168	20	0.12
HAFE	106	22	0.21
MANA	119	27	0.23
NACE	132	35	0.27
ROCR	67	18	0.27

In summary, the graminoid inventory of 7 National Parks within the National Capital Region documented at least 90% of the graminoid species estimated to be present at the different parks. State-listed species were documented, highlighting the importance of these Parks in providing habitat for critical species. Of particular management concern is the grass *Microstegium vimineum*, which is present in all National Parks that were inventoried and has the potential to displace native species (Adams 2007).

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APPENDIX:

Species List for Catoctin Mountain Park

ID	Park	Source[1]	Family	Species	TSN[2]	Nativeness	Voucher[3]
1	CATO	Wlk_Rte	Poaceae	Agrostis gigantea	40414	Introduced	
2	CATO	Wlk_Rte	Poaceae	Agrostis hyemalis var. scabra		Native	
3	CATO	Station	Poaceae	Agrostis perennans	40423	Native	
4	CATO	Station	Poaceae	Alopecurus pratensis	40438	Introduced	X
5	CATO	Station	Poaceae	Andropogon virginicus	40456	Native	
6	CATO	Station	Poaceae	Anthoxanthum odoratum	41395	Introduced	
7	CATO	Station	Poaceae	Brachyelytrum erectum	41527	Native	X
8	CATO	Wlk_Rte	Poaceae	Bromus commutatus	40497	Introduced	
9	CATO	Station	Poaceae	Bromus inermis	40502	Introduced	
10	CATO	Station	Poaceae	Bromus pubescens	40514	Native	X
11	CATO	Station	Poaceae	Bromus sterilis	40522	Introduced	
12	CATO	Station	Cyperaceae	Carex aggregata	39483	Native	X
13	CATO	Station	Cyperaceae	Carex albicans var. albicans	527064	Native	X
14	CATO	Station	Cyperaceae	Carex albursina	39487	Native	
15	CATO	Station	Cyperaceae	Carex amphibola	39491	Native	
16	CATO	Station	Cyperaceae	Carex blanda	39379	Native	
17	CATO	Station	Cyperaceae	Carex cephalophora	39383	Native	
18	CATO	Station	Cyperaceae	Carex communis	39550	Native	X
19	CATO	Station	Cyperaceae	Carex digitalis	39576	Native	X
20	CATO	Station	Cyperaceae	Carex festucacea	39391	Native	
21	CATO	Wlk_Rte	Cyperaceae	Carex frankii	39393	Native	
22	CATO	Station	Cyperaceae	Carex glaucodea	39616	Native	
23	CATO	Station	Cyperaceae	Carex gracilescens	39618	Native	
24	CATO	Station	Cyperaceae	Carex gracillima	39620	Native	
25	CATO	Station	Cyperaceae	Carex hirsutella	39636	Native	
26	CATO	Station	Cyperaceae	Carex intumescens	39403	Native	
27	CATO	Station	Cyperaceae	Carex kraliana		Native	
28	CATO	Station	Cyperaceae	Carex laevivaginata	39410	Native	
29	CATO	Station	Cyperaceae	Carex laxiculmis	39411	Native	X
30	CATO	Station	Cyperaceae	Carex laxiflora	39662	Native	X
31	CATO	Station	Cyperaceae	Carex leptalea	39669	Native	
32	CATO	Station	Cyperaceae	Carex longii	501240	Native	
33	CATO	Station	Cyperaceae	Carex lurida	39414	Native	
34	CATO	Station	Cyperaceae	Carex normalis	39720	Native	
35	CATO	Station	Cyperaceae	Carex pensylvanica	39749	Native	X
36	CATO	Station	Cyperaceae	Carex platyphylla	39761	Native	X
37	CATO	Station	Cyperaceae	Carex prasina	39769	Native	X
38	CATO	Station	Cyperaceae	Carex radiata	39778	Native	
39	CATO	Station	Cyperaceae	Carex retroflexa	39782	Native	X
40	CATO	Station	Cyperaceae	Carex rosea	39429	Native	
41	CATO	Wlk_Rte	Cyperaceae	Carex sparganioides	39808	Native	X
42	CATO	Station	Cyperaceae	Carex stipata	39434	Native	

43	CATO	Wlk_Rte	Cyperaceae	Carex stipata var. stipata	527159	Native	
44	CATO	Station	Cyperaceae	Carex swanii	39437	Native	X
45	CATO	Station	Cyperaceae	Carex tonsa	39846	Native	
46	CATO	Station	Cyperaceae	Carex torta	39848	Native	
47	CATO	Station	Cyperaceae	Carex tribuloides	39438	Native	
48	CATO	Station	Cyperaceae	Carex umbellata	39857	Native	
49	CATO	Station	Cyperaceae	Carex virescens	39867	Native	
50	CATO	Wlk_Rte	Cyperaceae	Carex vulpinoidea	39442	Native	
51	CATO	Station	Cyperaceae	Carex willdenowii	39443	Native	
52	CATO	Wlk_Rte	Poaceae	Cinna arundinacea	40583	Native	X
53	CATO	Station	Poaceae	Dactylis glomerata	193446	Introduced	
54	CATO	Station	Poaceae	Danthonia spicata	41642	Native	
55	CATO	Station	Poaceae	Dichanthelium boscii	41655	Native	X
56	CATO	Station	Poaceae	Dichanthelium clandestinum	41656	Native	
57	CATO	Station	Poaceae	Dichanthelium commutatum	41647	Native	X
58	CATO	Station	Poaceae	Dichanthelium depauperatum	41658	Native	
59	CATO	Station	Poaceae	Dichanthelium dichotomum	41659	Native	X
60	CATO	Station	Poaceae	Dichanthelium latifolium	41648	Native	X
61	CATO	Wlk_Rte	Poaceae	Dichanthelium laxiflorum	41661	Native	
62	CATO	Station	Poaceae	Dichanthelium linearifolium	41664	Native	X
63	CATO	Station	Poaceae	Dichanthelium villosissimum	502040	Native	
64	CATO	Wlk_Rte	Poaceae	Echinochloa crus-galli	502210	Introduced	X
65	CATO	Wlk_Rte	Poaceae	Elymus hystrix	40698	Native	X
66	CATO	Wlk_Rte	Poaceae	Elymus repens	512839	Introduced	
67	CATO	Wlk_Rte	Poaceae	Elymus riparius	40706	Native	
68	CATO	Station	Poaceae	Elymus virginicus	40681	Native	
69	CATO	Station	Poaceae	Festuca subverticillata	502612	Native	
70	CATO	Station	Poaceae	Glyceria striata	40833	Native	
71	CATO	Station	Juncaceae	Juncus effusus	39232	Native	
72	CATO	Station	Juncaceae	Juncus tenuis	39243	Native	
73	CATO	Station	Poaceae	Leersia oryzoides	40886	Native	
74	CATO	Station	Poaceae	Lolium arundinaceum	507979	Introduced	
75	CATO	Wlk_Rte	Poaceae	Lolium perenne	40893	Introduced	
76	CATO	Wlk_Rte	Poaceae	Lolium pratense	507983	Introduced	
77	CATO	Station	Juncaceae	Luzula campestris	503590	Native	
78	CATO	Wlk_Rte	Juncaceae	Luzula multiflora	39333	Native	
79	CATO	Station	Poaceae	Microstegium vimineum	503829	Introduced	
80	CATO	Station	Poaceae	Muhlenbergia frondosa	41915	Native	
81	CATO	Station	Poaceae	Muhlenbergia schreberi	41939	Native	
82	CATO	Wlk_Rte	Poaceae	Muhlenbergia tenuiflora	41943	Native	X
83	CATO	Station	Poaceae	Phalaris arundinacea	41335	Native	
84	CATO	Wlk_Rte	Poaceae	Phleum pratense	41062	Introduced	
85	CATO	Station	Poaceae	Piptatherum racemosum	507992	Native	X
86	CATO	Wlk_Rte	Poaceae	Poa annua	41107	Introduced	
87	CATO	Station	Poaceae	Poa compressa	41082	Introduced	
88	CATO	Station	Poaceae	Poa pratensis	41088	Introduced	
89	CATO	Wlk_Rte	Poaceae	Poa sylvestris	41162	Native	
90	CATO	Station	Poaceae	Poa trivialis	41163	Introduced	X

91	CATO	Station	Poaceae	Schizachyrium scoparium var. scoparium	530264	Native	
92	CATO	Wlk_Rte	Cyperaceae	Scirpus cyperinus	40228	Native	
93	CATO	Wlk_Rte	Cyperaceae	Scirpus georgianus	40259	Native	
94	CATO	Wlk_Rte	Poaceae	Setaria faberi	41244	Introduced	
95	CATO	Wlk_Rte	Poaceae	Setaria viridis	41231	Introduced	
96	CATO	Station	Poaceae	Sphenopholis intermedia	505324	Native	
97	CATO	Wlk_Rte	Poaceae	Sphenopholis obtusata	41279	Native	X
98	CATO	Station	Cyperaceae	Trichophorum planifolium	507802	Native	X

[1] Source refers to the sampling protocol used to identify species. Stations were selected to represent different habitats within the park. Fifteen minutes of search time was allocated for each station (time was stopped for species identification). At the end of 15 minutes, time was added in 3-min increments until no new species were sampled. Walk-throughs (Wlk_Rte) were also conducted in different areas of the park to increase the chance of finding more cryptic species.

[2] TSN is a unique identifier number given to all species by the Integrated Taxonomic Information System (ITIS). When the taxonomy of a species is still in flux, no number may be provided. ITIS also provides information on the nativeness (native or introduced) of a species.

[3] Indicated are vouchers (X) that were collected by the current inventory.

Species List for Chesapeake Ohio Canal National Historical Park

ID	Park	Source[1]	Family	Species	TSN[2]	Nativeness	Voucher[3]
1	CHOH	Station	Poaceae	Agrostis gigantea	40414	Introduced	
2	CHOH	Station	Poaceae	Agrostis hyemalis var. scabra		Native	X
3	CHOH	Wlk_Rte	Poaceae	Agrostis perennans	40423	Native	
4	CHOH	Station	Poaceae	Andropogon virginicus	40456	Native	
5	CHOH	Station	Poaceae	Anthoxanthum odoratum	41395	Introduced	
6	CHOH	Station	Poaceae	Arrhenatherum elatius	41443	Introduced	
7	CHOH	Wlk_Rte	Poaceae	Brachyelytrum erectum	41527	Native	
8	CHOH	Station	Poaceae	Bromus commutatus	40497	Introduced	
9	CHOH	Station	Poaceae	Bromus inermis	40502	Introduced	
10	CHOH	Station	Poaceae	Bromus pubescens	40514	Native	
11	CHOH	Station	Poaceae	Bromus sterilis	40522	Introduced	
12	CHOH	Station	Poaceae	Bromus tectorum	40524	Introduced	X
13	CHOH	Station	Poaceae	Calamagrostis canadensis	40544	Native	
14	CHOH	Station	Cyperaceae	Carex aggregata	39483	Native	
15	CHOH	Station	Cyperaceae	Carex albicans	565042	Native	
16	CHOH	Wlk_Rte	Cyperaceae	Carex albicans var. albicans	527064	Native	X
17	CHOH	Chris Lea survey	Cyperaceae	Carex albicans var. australis	527065	Native	
18	CHOH	Station	Cyperaceae	Carex albolutescens	39371	Native	X
19	CHOH	Station	Cyperaceae	Carex albursina	39487	Native	X
20	CHOH	Station	Cyperaceae	Carex amphibola	39491	Native	
21	CHOH	Station	Cyperaceae	Carex annectens	39373	Native	X
22	CHOH	Chris Lea survey	Cyperaceae	Carex atlantica	39450	Native	
23	CHOH	Station	Cyperaceae	Carex blanda	39379	Native	
24	CHOH	Chris Lea survey	Cyperaceae	Carex brevior	39451	Native	
25	CHOH	Chris Lea survey	Cyperaceae	Carex bushii	39536	Native	
26	CHOH	Chris Lea survey	Cyperaceae	Carex careyana	39541	Native	
27	CHOH	Station	Cyperaceae	Carex caroliniana	39382	Native	
28	CHOH	Station	Cyperaceae	Carex cephalophora	39383	Native	
29	CHOH	Station	Cyperaceae	Carex communis	39550	Native	
30	CHOH	Wlk_Rte	Cyperaceae	Carex comosa	39384	Native	
31	CHOH	Station	Cyperaceae	Carex complanata	39551	Native	X
32	CHOH	Station	Cyperaceae	Carex conjuncta	39555	Native	
33	CHOH	Chris Lea survey	Cyperaceae	Carex corrugata	39557	Native	
34	CHOH	Station	Cyperaceae	Carex crinita	39385	Native	
35	CHOH	Station	Cyperaceae	Carex crinita var. brevicrinis	527081	Native	
36	CHOH	Wlk_Rte	Cyperaceae	Carex crinita var. crinita	39388	Native	
37	CHOH	Chris Lea survey	Cyperaceae	Carex cristatella	39561	Native	
38	CHOH	Chris Lea survey	Cyperaceae	Carex davisii	39569	Native	
39	CHOH	Station	Cyperaceae	Carex debilis	39572	Native	
40	CHOH	Station	Cyperaceae	Carex digitalis	39576	Native	
41	CHOH	Chris Lea survey	Cyperaceae	Carex emmonsii	39590	Native	
42	CHOH	Station	Cyperaceae	Carex emoryi	39591	Native	
43	CHOH	Station	Cyperaceae	Carex frankii	39393	Native	
44	CHOH	Station	Cyperaceae	Carex glaucodea	39616	Native	
45	CHOH	Station	Cyperaceae	Carex gracillima	39620	Native	X

46	CHOH	Station	Cyperaceae	Carex granularis	39398	Native	X
47	CHOH	Station	Cyperaceae	Carex grayi	39622	Native	
48	CHOH	Station	Cyperaceae	Carex grisea	510206	Native	X
49	CHOH	Station	Cyperaceae	Carex gynandra	39623	Native	
50	CHOH	Station	Cyperaceae	Carex hirsutella	39636	Native	X
51	CHOH	Chris Lea survey	Cyperaceae	Carex hirtifolia	39638	Native	
52	CHOH	Chris Lea survey	Cyperaceae	Carex hitchcockiana	39640	Native	
53	CHOH	Station	Cyperaceae	Carex intumescens	39403	Native	
54	CHOH	Station	Cyperaceae	Carex jamesii	39404	Native	
55	CHOH	Wlk_Rte	Cyperaceae	Carex laevivaginata	39410	Native	
56	CHOH	Wlk_Rte	Cyperaceae	Carex laxiculmis	39411	Native	
57	CHOH	Station	Cyperaceae	Carex laxiflora	39662	Native	
58	CHOH	Chris Lea survey	Cyperaceae	Carex leavenworthii	39663	Native	
59	CHOH	Chris Lea survey	Cyperaceae	Carex lupuliformis	39412	Native	
60	CHOH	Station	Cyperaceae	Carex lupulina	39413	Native	
61	CHOH	Station	Cyperaceae	Carex lurida	39414	Native	
62	CHOH	Station	Cyperaceae	Carex muehlenbergii	39423	Native	
63	CHOH	Wlk_Rte	Cyperaceae	Carex muehlenbergii var. enervis	527128	Native	
64	CHOH	Wlk_Rte	Cyperaceae	Carex nigromarginata	39719	Native	X
65	CHOH	Station	Cyperaceae	Carex normalis	39720	Native	
66	CHOH	Wlk_Rte	Cyperaceae	Carex oligocarpa	39728	Native	X
67	CHOH	Station	Cyperaceae	Carex pensylvanica	39749	Native	
68	CHOH	Chris Lea survey	Cyperaceae	Carex planispicata		Native	
69	CHOH	Station	Cyperaceae	Carex platyphylla	39761	Native	
70	CHOH	Wlk_Rte	Cyperaceae	Carex prasina	39769	Native	
71	CHOH	Station	Cyperaceae	Carex radiata	39778	Native	X
72	CHOH	Station	Cyperaceae	Carex retroflexa	39782	Native	
73	CHOH	Station	Cyperaceae	Carex rosea	39429	Native	
74	CHOH	Chris Lea survey	Cyperaceae	Carex scoparia	39432	Native	
75	CHOH	Station	Cyperaceae	Carex shortiana	39804	Native	X
76	CHOH	Chris Lea survey	Cyperaceae	Carex sparganioides	39808	Native	
77	CHOH	Station	Cyperaceae	Carex squarrosa	39815	Native	
78	CHOH	Station	Cyperaceae	Carex stipata	39434	Native	
79	CHOH	Station	Cyperaceae	Carex stipata var. maxima	527158	Native	
80	CHOH	Station	Cyperaceae	Carex stipata var. stipata	527159	Native	
81	CHOH	Station	Cyperaceae	Carex striatula	39822	Native	
82	CHOH	Wlk_Rte	Cyperaceae	Carex styloflexa	39823	Native	
83	CHOH	Station	Cyperaceae	Carex swanii	39437	Native	
84	CHOH	Chris Lea survey	Cyperaceae	Carex tenera	39838	Native	
85	CHOH	Wlk_Rte	Cyperaceae	Carex tonsa var. rugosperma	566213	Native	
86	CHOH	Chris Lea survey	Cyperaceae	Carex torta	39848	Native	
87	CHOH	Station	Cyperaceae	Carex tribuloides	39438	Native	
88	CHOH	Station	Cyperaceae	Carex typhina	39439	Native	
89	CHOH	Wlk_Rte	Cyperaceae	Carex umbellata	39857	Native	
90	CHOH	Wlk_Rte	Cyperaceae	Carex virescens	39867	Native	
91	CHOH	Station	Cyperaceae	Carex vulpinoidea	39442	Native	
92	CHOH	Station	Cyperaceae	Carex willdenowii	39443	Native	
93	CHOH	Chris Lea survey	Cyperaceae	Carex woodii	39873	Native	

94	CHOH	Station	Poaceae	Chasmanthium latifolium	41547	Native	X
95	CHOH	Station	Poaceae	Cinna arundinacea	40583	Native	
96	CHOH	Station	Cyperaceae	Cyperus odoratus	39894	Native	
97	CHOH	Station	Cyperaceae	Cyperus squarrosus	501940	Native	X
98	CHOH	Station	Cyperaceae	Cyperus strigosus	39901	Native	
99	CHOH	Station	Poaceae	Dactylis glomerata	193446	Introduced	
100	CHOH	Station	Poaceae	Danthonia spicata	41642	Native	
101	CHOH	Station	Poaceae	Deschampsia flexuosa	40595	Native	
102	CHOH	Station	Poaceae	Diarrhena obovata	506940	Native	
103	CHOH	Station	Poaceae	Dichanthelium boscii	41655	Native	
104	CHOH	Station	Poaceae	Dichanthelium clandestinum	41656	Native	
105	CHOH	Station	Poaceae	Dichanthelium commutatum	41647	Native	
106	CHOH	Station	Poaceae	Dichanthelium depauperatum	41658	Native	
107	CHOH	Station	Poaceae	Dichanthelium dichotomum	41659	Native	
108	CHOH	Station	Poaceae	Dichanthelium latifolium	41648	Native	
109	CHOH	Station	Poaceae	Dichanthelium laxiflorum	41661	Native	
110	CHOH	Station	Poaceae	Dichanthelium linearifolium	41664	Native	X
111	CHOH	Wlk_Rte	Poaceae	Dichanthelium oligosanthes	41667	Native	
112	CHOH	Wlk_Rte	Poaceae	Dichanthelium scoparium	41651	Native	X
113	CHOH	Station	Poaceae	Dichanthelium villosissimum	502040	Native	
114	CHOH	Station	Poaceae	Digitaria sanguinalis	40604	Native	
115	CHOH	Wlk_Rte	Poaceae	Echinochloa crus-galli	502210	Introduced	
116	CHOH	Station	Poaceae	Echinochloa muricata	40672	Native	
117	CHOH	Station	Cyperaceae	Eleocharis obtusa	40017	Native	X
118	CHOH	Station	Poaceae	Eleusine indica	41692	Introduced	
119	CHOH	Station	Poaceae	Elymus hystrix	40698	Native	
120	CHOH	Station	Poaceae	Elymus repens	512839	Introduced	
121	CHOH	Station	Poaceae	Elymus riparius	40706	Native	
122	CHOH	Station	Poaceae	Elymus villosus	40714	Native	X
123	CHOH	Station	Poaceae	Elymus villosus X virginicus		Native	
124	CHOH	Station	Poaceae	Elymus virginicus	40681	Native	
125	CHOH	Wlk_Rte	Poaceae	Eragrostis cilianensis	40719	Introduced	
126	CHOH	Wlk_Rte	Poaceae	Eragrostis frankii	40741	Native	
127	CHOH	Station	Poaceae	Eragrostis hypnoides	40721	Native	X
128	CHOH	Wlk_Rte	Poaceae	Eragrostis spectabilis	40717	Native	X
129	CHOH	Station	Poaceae	Festuca rubra	40796	Native	
130	CHOH	Station	Poaceae	Festuca subverticillata	502612	Native	
131	CHOH	Station	Poaceae	Glyceria septentrionalis	40840	Native	
132	CHOH	Station	Poaceae	Glyceria striata	40833	Native	
133	CHOH	Station	Juncaceae	Juncus acuminatus	39221	Native	X
134	CHOH	Station	Juncaceae	Juncus coriaceus	39230	Native	
135	CHOH	Station	Juncaceae	Juncus effusus	39232	Native	
136	CHOH	Station	Juncaceae	Juncus marginatus	39289	Native	X
137	CHOH	Station	Juncaceae	Juncus tenuis	39243	Native	
138	CHOH	Station	Poaceae	Leersia oryzoides	40886	Native	
139	CHOH	Station	Poaceae	Leersia virginica	40890	Native	
140	CHOH	Station	Poaceae	Lolium arundinaceum	507979	Introduced	
141	CHOH	Station	Poaceae	Lolium perenne	40893	Introduced	

142	CHOH	Station	Poaceae	Lolium perenne ssp. perenne	524261	Introduced	
143	CHOH	Station	Poaceae	Lolium pratense	507983	Introduced	
144	CHOH	Station	Juncaceae	Luzula campestris	503590	Native	
145	CHOH	Wlk_Rte	Juncaceae	Luzula echinata	39342	Native	
146	CHOH	Wlk_Rte	Juncaceae	Luzula multiflora	39333	Native	
147	CHOH	Station	Poaceae	Melica mutica	41858	Native	X
148	CHOH	Station	Poaceae	Microstegium vimineum	503829	Introduced	
149	CHOH	Station	Poaceae	Muhlenbergia schreberi	41939	Native	
150	CHOH	Station	Poaceae	Muhlenbergia sobolifera	41941	Native	
151	CHOH	Station	Poaceae	Panicum dichotomiflorum	40908	Native	
152	CHOH	Wlk_Rte	Poaceae	Panicum virgatum	40913	Native	
153	CHOH	Station	Poaceae	Phalaris arundinacea	41335	Native	
154	CHOH	Station	Poaceae	Phleum pratense	41062	Introduced	
155	CHOH	Station	Poaceae	Piptochaetium avenaceum	504408	Native	
156	CHOH	Station	Poaceae	Poa annua	41107	Introduced	
157	CHOH	Wlk_Rte	Poaceae	Poa autumnalis	41111	Native	
158	CHOH	Station	Poaceae	Poa compressa	41082	Introduced	
159	CHOH	Station	Poaceae	Poa cuspidata	41122	Native	
160	CHOH	Station	Poaceae	Poa pratensis	41088	Introduced	
161	CHOH	Station	Poaceae	Poa sylvestris	41162	Native	
162	CHOH	Station	Poaceae	Poa trivialis	41163	Introduced	
163	CHOH	Station	Cyperaceae	Rhynchospora capitellata	40145	Native	X
164	CHOH	Wlk_Rte	Poaceae	Schizachyrium scoparium var. scoparium	530264	Native	
165	CHOH	Station	Cyperaceae	Schoenoplectus pungens	508146	Native	X
166	CHOH	Station	Cyperaceae	Schoenoplectus tabernaemontani	507797	Native	
167	CHOH	Wlk_Rte	Cyperaceae	Scirpus cyperinus	40228	Native	
168	CHOH	Station	Cyperaceae	Scirpus georgianus	40259	Native	
169	CHOH	Station	Cyperaceae	Scirpus pendulus	40273	Native	
170	CHOH	Wlk_Rte	Cyperaceae	Scirpus polyphyllus	40274	Native	
171	CHOH	Station	Cyperaceae	Scleria oligantha	40314	Native	X
172	CHOH	Station	Poaceae	Setaria parviflora	505191	Native	
173	CHOH	Wlk_Rte	Poaceae	Setaria viridis	41231	Introduced	
174	CHOH	Wlk_Rte	Poaceae	Sorghum halepense	42111	Introduced	
175	CHOH	Station	Poaceae	Sphenopholis intermedia	505324	Native	
176	CHOH	Wlk_Rte	Poaceae	Sphenopholis nitida	41281	Native	
177	CHOH	Station	Poaceae	Sphenopholis obtusata	41279	Native	
178	CHOH	Station	Poaceae	Tridens flavus	42227	Native	
179	CHOH	Station	Poaceae	Tripsacum dactyloides	41287	Native	
180	CHOH	Station	Poaceae	Triticum aestivum	42237	Introduced	
181	CHOH	Station	Poaceae	Vulpia octoflora	42264	Native	
182	CHOH	Station	Poaceae	Zea mays	42269	Introduced	

[1] Source refers to the sampling protocol used to identify species. Stations were selected to represent different habitats within the park. Fifteen minutes of search time was allocated for each station (time was stopped for species identification). At the end of 15 minutes, time was added in 3-min increments until no new species were sampled. Walk-throughs (Wlk_Rte) were also conducted in different areas of the park to increase the chance of finding more cryptic species. Chris Lea (Chris Lea Survey)

conducted surveys of the genus Carex in parts of the park. His unique species identifications are added to the species list as they represent additional species that are known to occur in the park.

[2] TSN is a unique identifier number given to all species by the Integrated Taxonomic Information System (ITIS). When the taxonomy of a species is still in flux, no number may be provided. ITIS also provides information on the nativeness (native or introduced) of a species.

[3] Indicated are vouchers (X) that were collected by the current inventory.

Species List for George Washington Memorial Parkway, Great Falls Park

	Park	Source[1]	Family	Species	TSN[2]	Nativeness	Voucher[3]
1	GWMP	Station	Poaceae	Agrostis perennans	40423	Native	
2	GWMP	Station	Poaceae	Agrostis stolonifera	40400	Native	
3	GWMP	Station	Poaceae	Andropogon gerardii	40462	Native	
4	GWMP	Station	Poaceae	Anthoxanthum odoratum	41395	Introduced	
5	GWMP	Wlk_Rte	Poaceae	Arthraxon hispidus	41445	Introduced	
6	GWMP	Station	Poaceae	Brachyelytrum erectum	41527	Native	X
7	GWMP	Wlk_Rte	Poaceae	Bromus catharticus	501066	Introduced	X
8	GWMP	Station	Poaceae	Bromus commutatus	40497	Introduced	
9	GWMP	Wlk_Rte	Poaceae	Bromus japonicus	40479	Introduced	
10	GWMP	Wlk_Rte	Poaceae	Bromus pubescens	40514	Native	
11	GWMP	Station	Cyperaceae	Carex aggregata	39483	Native	
12	GWMP	Station	Cyperaceae	Carex albicans var. albicans	527064	Native	X
13	GWMP	GWMP Herbarium	Cyperaceae	Carex albicans var. emmonsii	527066	Native	X
14	GWMP	Wlk_Rte	Cyperaceae	Carex albolutescens	39371	Native	
15	GWMP	Station	Cyperaceae	Carex amphibola	39491	Native	
16	GWMP	GWMP Herbarium	Cyperaceae	Carex annectens	39373	Native	X
17	GWMP	Station	Cyperaceae	Carex blanda	39379	Native	
18	GWMP	GWMP Herbarium	Cyperaceae	Carex careyana	39541	Native	X
19	GWMP	Wlk_Rte	Cyperaceae	Carex caroliniana	39382	Native	
20	GWMP	Station	Cyperaceae	Carex cephalophora	39383	Native	
21	GWMP	Wlk_Rte	Cyperaceae	Carex communis	39550	Native	
22	GWMP	GWMP Herbarium	Cyperaceae	Carex complanata var. complanata	39551	Native	X
23	GWMP	Station	Cyperaceae	Carex conjuncta	39555	Native	
24	GWMP	Station	Cyperaceae	Carex crinita	39385	Native	
25	GWMP	GWMP Herbarium	Cyperaceae	Carex crinita var. brevicrinis	527081	Native	X
26	GWMP	Station	Cyperaceae	Carex cristatella	39561	Native	
27	GWMP	Station	Cyperaceae	Carex davisii	39569	Native	
28	GWMP	Station	Cyperaceae	Carex debilis	39572	Native	
29	GWMP	Station	Cyperaceae	Carex digitalis	39576	Native	X
30	GWMP	GWMP Herbarium	Cyperaceae	Carex emoryi	39591	Native	X
31	GWMP	Station	Cyperaceae	Carex festucacea	39391	Native	
32	GWMP	Station	Cyperaceae	Carex frankii	39393	Native	
33	GWMP	Wlk_Rte	Cyperaceae	Carex glaucodea	39616	Native	
34	GWMP	Wlk_Rte	Cyperaceae	Carex gracilescens	39618	Native	
35	GWMP	Wlk_Rte	Cyperaceae	Carex gracillima	39620	Native	X
36	GWMP	Station	Cyperaceae	Carex grayi	39622	Native	X
37	GWMP	Wlk_Rte	Cyperaceae	Carex grisea	510206	Native	
38	GWMP	Station	Cyperaceae	Carex gynandra	39623	Native	
39	GWMP	Station	Cyperaceae	Carex hirsutella	39636	Native	X
40	GWMP	GWMP Herbarium	Cyperaceae	Carex hirtifolia	39638	Native	X
41	GWMP	Station	Cyperaceae	Carex intumescens	39403	Native	
42	GWMP	Station	Cyperaceae	Carex jamesii	39404	Native	
43	GWMP	Station	Cyperaceae	Carex laevivaginata	39410	Native	
44	GWMP	Station	Cyperaceae	Carex laxiculmis	39411	Native	

45	GWMP	Station	Cyperaceae	Carex laxiflora	39662	Native	X
46	GWMP	Wlk_Rte	Cyperaceae	Carex leavenworthii	39663	Native	
47	GWMP	GWMP Herbarium	Cyperaceae	Carex leptalea	39669	Native	X
48	GWMP	Station	Cyperaceae	Carex lupulina	39413	Native	X
49	GWMP	Station	Cyperaceae	Carex lurida	39414	Native	
50	GWMP	Station	Cyperaceae	Carex nigromarginata	39719	Native	
51	GWMP	Wlk_Rte	Cyperaceae	Carex normalis	39720	Native	
52	GWMP	Station	Cyperaceae	Carex pensylvanica	39749	Native	X
53	GWMP	GWMP Herbarium	Cyperaceae	Carex planispicata		Native	X
54	GWMP	Wlk_Rte	Cyperaceae	Carex prasina	39769	Native	
55	GWMP	Station	Cyperaceae	Carex radiata	39778	Native	
56	GWMP	GWMP Herbarium	Cyperaceae	Carex retroflexa	39782	Native	X
57	GWMP	Station	Cyperaceae	Carex rosea	39429	Native	X
58	GWMP	Wlk_Rte	Cyperaceae	Carex scoparia	39432	Native	
59	GWMP	Station	Cyperaceae	Carex shortiana	39804	Native	
60	GWMP	GWMP Herbarium	Cyperaceae	Carex sparganioides	39808	Native	X
61	GWMP	Station	Cyperaceae	Carex squarrosa	39815	Native	X
62	GWMP	GWMP Herbarium	Cyperaceae	Carex straminea	39820	Native	X
63	GWMP	GWMP Herbarium	Cyperaceae	Carex stricta	39435	Native	X
64	GWMP	Wlk_Rte	Cyperaceae	Carex styloflexa	39823	Native	
65	GWMP	Station	Cyperaceae	Carex swanii	39437	Native	
66	GWMP	Station	Cyperaceae	Carex tribuloides	39438	Native	
67	GWMP	Station	Cyperaceae	Carex umbellata	39857	Native	
68	GWMP	Wlk_Rte	Cyperaceae	Carex virescens	39867	Native	X
69	GWMP	Station	Cyperaceae	Carex vulpinoidea	39442	Native	
70	GWMP	Station	Cyperaceae	Carex willdenowii	39443	Native	
71	GWMP	Station	Poaceae	Chasmanthium latifolium	41547	Native	
72	GWMP	Station	Poaceae	Cinna arundinacea	40583	Native	
73	GWMP	Station	Cyperaceae	Cyperus echinatus	501920	Native	
74	GWMP	GWMP Herbarium	Cyperaceae	Cyperus flavescens	39891	Native	X
75	GWMP	GWMP Herbarium	Cyperaceae	Cyperus lancastriensis	39893	Native	X
76	GWMP	Station	Cyperaceae	Cyperus odoratus	39894	Native	X
77	GWMP	Station	Cyperaceae	Cyperus pseudovegetus	39896	Native	
78	GWMP	Station	Cyperaceae	Cyperus squarrosus	501940	Native	X
79	GWMP	Station	Cyperaceae	Cyperus strigosus	39901	Native	
80	GWMP	Station	Poaceae	Dactylis glomerata	193446	Introduced	
81	GWMP	Station	Poaceae	Danthonia spicata	41642	Native	X
82	GWMP	GWMP Herbarium	Poaceae	Dichanthelium acuminatum	41646	Native	X
83	GWMP	Station	Poaceae	Dichanthelium boscii	41655	Native	
84	GWMP	Station	Poaceae	Dichanthelium clandestinum	41656	Native	
85	GWMP	Station	Poaceae	Dichanthelium commutatum	41647	Native	
86	GWMP	Station	Poaceae	Dichanthelium depauperatum	41658	Native	X
87	GWMP	Station	Poaceae	Dichanthelium dichotomum	41659	Native	
88	GWMP	Station	Poaceae	Dichanthelium laxiflorum	41661	Native	X
89	GWMP	Wlk_Rte	Poaceae	Dichanthelium sphaerocarpon	41671	Native	
90	GWMP	Station	Poaceae	Dichanthelium sphaerocarpon var. isophyllum	527701	Native	X
91	GWMP	Station	Poaceae	Dichanthelium villosissimum	502040	Native	
92	GWMP	Station	Poaceae	Digitaria ischaemum	40637	Introduced	X

93	GWMP	GWMP Herbarium	Poaceae	Digitaria sanguinalis	40604	Native	X
94	GWMP	Station	Poaceae	Echinochloa crus-galli	502210	Introduced	
95	GWMP	Station	Poaceae	Echinochloa muricata	40672	Native	X
96	GWMP	GWMP Herbarium	Cyperaceae	Eleocharis compressa	40012	Native	X
97	GWMP	Station	Cyperaceae	Eleocharis obtusa	40017	Native	
98	GWMP	Station	Cyperaceae	Eleocharis tenuis	40070	Native	
99	GWMP	Station	Poaceae	Eleusine indica	41692	Introduced	
100	GWMP	Station	Poaceae	Elymus hystrix	40698	Native	
101	GWMP	GWMP Herbarium	Poaceae	Elymus riparius	40706	Native	X
102	GWMP	Station	Poaceae	Elymus villosus	40714	Native	X
103	GWMP	Station	Poaceae	Elymus virginicus	40681	Native	
104	GWMP	Station	Poaceae	Eragrostis frankii	40741	Native	X
105	GWMP	Station	Poaceae	Eragrostis hypnoides	40721	Native	X
106	GWMP	Station	Poaceae	Eragrostis spectabilis	40717	Native	X
107	GWMP	Station	Poaceae	Festuca subverticillata	502612	Native	
108	GWMP	Station	Poaceae	Glyceria striata	40833	Native	
109	GWMP	Station	Poaceae	Holcus lanatus	41773	Introduced	
110	GWMP	GWMP Herbarium	Poaceae	Hordeum vulgare	40874	Introduced	X
111	GWMP	Station	Juncaceae	Juncus acuminatus	39221	Native	
112	GWMP	Station	Juncaceae	Juncus coriaceus	39230	Native	X
113	GWMP	GWMP Herbarium	Juncaceae	Juncus dichotomus	39264	Native	X
114	GWMP	Station	Juncaceae	Juncus effusus	39232	Native	
115	GWMP	Station	Juncaceae	Juncus marginatus	39289	Native	X
116	GWMP	Station	Juncaceae	Juncus secundus	39313	Native	
117	GWMP	Station	Juncaceae	Juncus tenuis	39243	Native	
118	GWMP	GWMP Herbarium	Cyperaceae	Kyllinga gracillima	507039	Native	X
119	GWMP	Station	Poaceae	Leersia oryzoides	40886	Native	X
120	GWMP	GWMP Herbarium	Poaceae	Leersia virginica	40890	Native	X
121	GWMP	Station	Poaceae	Lolium arundinaceum	507979	Introduced	
122	GWMP	GWMP Herbarium	Poaceae	Lolium perenne ssp. multiflorum	524260	Introduced	X
123	GWMP	Station	Poaceae	Lolium pratense	507983	Introduced	
124	GWMP	Station	Juncaceae	Luzula echinata	39342	Native	
125	GWMP	Wlk_Rte	Juncaceae	Luzula multiflora	39333	Native	X
126	GWMP	Station	Poaceae	Melica mutica	41858	Native	X
127	GWMP	Station	Poaceae	Microstegium vimineum	503829	Introduced	
128	GWMP	Station	Poaceae	Muhlenbergia frondosa	41915	Native	
129	GWMP	GWMP Herbarium	Poaceae	Muhlenbergia schreberi	41939	Native	X
130	GWMP	Station	Poaceae	Muhlenbergia sobolifera	41941	Native	
131	GWMP	Station	Poaceae	Muhlenbergia sylvatica	41942	Native	
132	GWMP	Station	Poaceae	Panicum anceps	40904	Native	
133	GWMP	GWMP Herbarium	Poaceae	Panicum dichotomiflorum	40908	Native	X
134	GWMP	GWMP Herbarium	Poaceae	Panicum rigidulum	40956	Native	X
135	GWMP	Station	Poaceae	Panicum virgatum	40913	Native	
136	GWMP	GWMP Herbarium	Poaceae	Paspalum fluitans	40998	Native	X
137	GWMP	Station	Poaceae	Phalaris arundinacea	41335	Native	X
138	GWMP	Station	Poaceae	Piptochaetium avenaceum	504408	Native	
139	GWMP	Wlk_Rte	Poaceae	Poa annua	41107	Introduced	
140	GWMP	Wlk_Rte	Poaceae	Poa autumnalis	41111	Native	X

141	GWMP	Station	Poaceae	Poa compressa	41082	Introduced	
142	GWMP	GWMP Herbarium	Poaceae	Poa cuspidata	41122	Native	X
143	GWMP	Station	Poaceae	Poa pratensis	41088	Introduced	
144	GWMP	Station	Poaceae	Poa sylvestris	41162	Native	
145	GWMP	Station	Poaceae	Poa trivialis	41163	Introduced	
146	GWMP	Station	Cyperaceae	Rhynchospora capitellata	40145	Native	
147	GWMP	Station	Cyperaceae	Rhynchospora recognita	565459	Native	X
148	GWMP	Station	Poaceae	Schizachyrium scoparium var. scoparium	530264	Native	X
149	GWMP	Station	Cyperaceae	Schoenoplectus tabernaemontani	507797	Native	X
150	GWMP	Station	Cyperaceae	Scirpus cyperinus	40228	Native	
151	GWMP	Station	Cyperaceae	Scirpus georgianus	40259	Native	
152	GWMP	Station	Cyperaceae	Scirpus pendulus	40273	Native	
153	GWMP	GWMP Herbarium	Cyperaceae	Scirpus polyphyllus	40274	Native	X
154	GWMP	Wlk_Rte	Cyperaceae	Scleria pauciflora	40315	Native	X
155	GWMP	Station	Cyperaceae	Scleria pauciflora var. pauciflora	530277	Native	X
156	GWMP	Station	Cyperaceae	Scleria triglomerata	40318	Native	X
157	GWMP	GWMP Herbarium	Poaceae	Setaria faberi	41244	Introduced	X
158	GWMP	GWMP Herbarium	Poaceae	Setaria parviflora	505191	Native	X
159	GWMP	Station	Poaceae	Setaria viridis	41231	Introduced	
160	GWMP	Station	Poaceae	Sorghastrum nutans	42102	Native	
161	GWMP	GWMP Herbarium	Poaceae	Sorghum bicolor	42108	Introduced	X
162	GWMP	GWMP Herbarium	Poaceae	Spartina pectinata	41272	Native	X
163	GWMP	Station	Poaceae	Sphenopholis intermedia	505324	Native	X
164	GWMP	Wlk_Rte	Poaceae	Sphenopholis nitida	41281	Native	
165	GWMP	Wlk_Rte	Poaceae	Sphenopholis obtusata	41279	Native	X
166	GWMP	Wlk_Rte	Cyperaceae	Trichophorum planifolium	507802	Native	
167	GWMP	Station	Poaceae	Tridens flavus	42227	Native	
168	GWMP	GWMP Herbarium	Poaceae	Tripsacum dactyloides	41287	Native	X

[1] Source refers to the sampling protocol used to identify species. Stations were selected to represent different habitats within the park. Fifteen minutes of search time was allocated for each station (time was stopped for species identification). At the end of 15 minutes, time was added in 3-min increments until no new species were sampled. Walk-throughs (Wlk_Rte) were also conducted in different areas of the park to increase the chance of finding more cryptic species. Species not sampled by the survey in the field but that exist as vouchers in the GWMP Herbarium are added to the species list as they represent additional species that are known to occur in the park.

[2] TSN is a unique identifier number given to all species by the Integrated Taxonomic Information System (ITIS). When the taxonomy of a species is still in flux, no number may be provided. ITIS also provides information on the nativeness (native or introduced) of a species.

[3] Indicated are vouchers (X) that were collected by the current inventory and that exist as vouchers in the GWMP Herbarium.

Species List of Harpers Ferry National Historical Park

ID	Park	Source[1]	Family	Species	TSN[2]	Nativeness	Voucher[3]
1	HAFE	Wlk_Rte	Poaceae	Agrostis gigantea	40414	Introduced	
2	HAFE	Station	Poaceae	Agrostis stolonifera	40400	Native	
3	HAFE	Wlk_Rte	Poaceae	Andropogon gerardii	40462	Native	
4	HAFE	Station	Poaceae	Andropogon virginicus	40456	Native	
5	HAFE	Station	Poaceae	Anthoxanthum odoratum	41395	Introduced	
6	HAFE	Wlk_Rte	Poaceae	Arrhenatherum elatius	41443	Introduced	
7	HAFE	Perles Report	Poaceae	Bouteloua curtipendula	41500	Native	
8	HAFE	Wlk_Rte	Poaceae	Brachyelytrum erectum	41527	Native	
9	HAFE	Station	Poaceae	Bromus commutatus	40497	Introduced	
10	HAFE	Station	Poaceae	Bromus inermis	40502	Introduced	
11	HAFE	Wlk_Rte	Poaceae	Bromus japonicus	40479	Introduced	
12	HAFE	Station	Poaceae	Bromus pubescens	40514	Native	X
13	HAFE	Station	Poaceae	Bromus sterilis	40522	Introduced	
14	HAFE	Wlk_Rte	Cyperaceae	Carex aggregata	39483	Native	
15	HAFE	Wlk_Rte	Cyperaceae	Carex albicans var. albicans	527064	Native	
16	HAFE	Wlk_Rte	Cyperaceae	Carex amphibola	39491	Native	
17	HAFE	Wlk_Rte	Cyperaceae	Carex argyrantha	39503	Native	
18	HAFE	Station	Cyperaceae	Carex blanda	39379	Native	
19	HAFE	Wlk_Rte	Cyperaceae	Carex bushii	39536	Native	
20	HAFE	Station	Cyperaceae	Carex cephalophora	39383	Native	X
21	HAFE	Wlk_Rte	Cyperaceae	Carex communis	39550	Native	X
22	HAFE	Station	Cyperaceae	Carex digitalis	39576	Native	
23	HAFE	Wlk_Rte	Cyperaceae	Carex emoryi	39591	Native	
24	HAFE	Wlk_Rte	Cyperaceae	Carex festucacea	39391	Native	
25	HAFE	Station	Cyperaceae	Carex frankii	39393	Native	
26	HAFE	Perles Report	Cyperaceae	Carex glaucodea	39616	Native	
27	HAFE	Station	Cyperaceae	Carex granularis	39398	Native	
28	HAFE	Wlk_Rte	Cyperaceae	Carex grisea	510206	Native	
29	HAFE	Station	Cyperaceae	Carex jamesii	39404	Native	
30	HAFE	Wlk_Rte	Cyperaceae	Carex laevivaginata	39410	Native	
31	HAFE	Wlk_Rte	Cyperaceae	Carex laxiflora	39662	Native	
32	HAFE	Station	Cyperaceae	Carex lurida	39414	Native	
33	HAFE	Station	Cyperaceae	Carex muehlenbergii	39423	Native	
34	HAFE	Station	Cyperaceae	Carex pensylvanica	39749	Native	X
35	HAFE	Wlk_Rte	Cyperaceae	Carex platyphylla	39761	Native	
36	HAFE	Station	Cyperaceae	Carex rosea	39429	Native	X
37	HAFE	Wlk_Rte	Cyperaceae	Carex shortiana	39804	Native	
38	HAFE	Wlk_Rte	Cyperaceae	Carex sparganioides	39808	Native	X
39	HAFE	Station	Cyperaceae	Carex stipata var. stipata	527159	Native	
40	HAFE	Station	Cyperaceae	Carex swanii	39437	Native	
41	HAFE	Wlk_Rte	Cyperaceae	Carex torta	39848	Native	
42	HAFE	Wlk_Rte	Cyperaceae	Carex virescens	39867	Native	
43	HAFE	Station	Cyperaceae	Carex vulpinoidea	39442	Native	
44	HAFE	Station	Cyperaceae	Carex willdenowii	39443	Native	
45	HAFE	Station	Cyperaceae	Cyperus squarrosus	501940	Native	X

46	HAFE	Station	Cyperaceae	Cyperus strigosus	39901	Native	
47	HAFE	Station	Poaceae	Dactylis glomerata	193446	Introduced	
48	HAFE	Station	Poaceae	Danthonia spicata	41642	Native	
49	HAFE	Perles Report	Poaceae	Dichanthelium acuminatum	41646	Native	
50	HAFE	Station	Poaceae	Dichanthelium boscii	41655	Native	
51	HAFE	Station	Poaceae	Dichanthelium clandestinum	41656	Native	
52	HAFE	Station	Poaceae	Dichanthelium depauperatum	41658	Native	X
53	HAFE	Station	Poaceae	Dichanthelium dichotomum	41659	Native	
54	HAFE	Wlk_Rte	Poaceae	Dichanthelium laxiflorum	41661	Native	
55	HAFE	Perles Report	Poaceae	Dichanthelium oligosanthes	41667	Native	
56	HAFE	Station	Poaceae	Dichanthelium villosissimum	502040	Native	
57	HAFE	Wlk_Rte	Poaceae	Digitaria sanguinalis	40604	Native	
58	HAFE	Wlk_Rte	Poaceae	Echinochloa crus-galli	502210	Introduced	
59	HAFE	Station	Cyperaceae	Eleocharis erythropoda	40043	Native	X
60	HAFE	Wlk_Rte	Cyperaceae	Eleocharis obtusa	40017	Native	
61	HAFE	Wlk_Rte	Cyperaceae	Eleocharis tenuis	40070	Native	
62	HAFE	Wlk_Rte	Poaceae	Elymus hystrix	40698	Native	
63	HAFE	Station	Poaceae	Elymus repens	512839	Introduced	
64	HAFE	Wlk_Rte	Poaceae	Elymus villosus	40714	Native	
65	HAFE	Station	Poaceae	Elymus virginicus	40681	Native	
66	HAFE	Wlk_Rte	Poaceae	Eragrostis capillaris	40774	Native	
67	HAFE	Station	Poaceae	Eragrostis frankii	40741	Native	X
68	HAFE	Station	Poaceae	Festuca rubra	40796	Native	
69	HAFE	Station	Poaceae	Festuca subverticillata	502612	Native	
70	HAFE	Wlk_Rte	Poaceae	Glyceria striata	40833	Native	
71	HAFE	Station	Juncaceae	Juncus acuminatus	39221	Native	
72	HAFE	Station	Juncaceae	Juncus effusus	39232	Native	
73	HAFE	Station	Juncaceae	Juncus tenuis	39243	Native	
74	HAFE	Station	Juncaceae	Juncus torreyi	39320	Native	X
75	HAFE	Wlk_Rte	Poaceae	Leersia oryzoides	40886	Native	
76	HAFE	Wlk_Rte	Poaceae	Leersia virginica	40890	Native	
77	HAFE	Station	Poaceae	Lolium arundinaceum	507979	Introduced	
78	HAFE	Wlk_Rte	Poaceae	Lolium perenne	40893	Introduced	
79	HAFE	Wlk_Rte	Juncaceae	Luzula multiflora	39333	Native	
80	HAFE	Station	Poaceae	Microstegium vimineum	503829	Introduced	
81	HAFE	Wlk_Rte	Poaceae	Muhlenbergia schreberi	41939	Native	
82	HAFE	Wlk_Rte	Poaceae	Muhlenbergia tenuiflora	41943	Native	
83	HAFE	Wlk_Rte	Poaceae	Panicum dichotomiflorum	40908	Native	
84	HAFE	Station	Poaceae	Panicum rigidulum var. pubescens	529368	Native	X
85	HAFE	Wlk_Rte	Poaceae	Phalaris arundinacea	41335	Native	
86	HAFE	Station	Poaceae	Phleum pratense	41062	Introduced	
87	HAFE	Wlk_Rte	Poaceae	Poa annua	41107	Introduced	
88	HAFE	Station	Poaceae	Poa compressa	41082	Introduced	
89	HAFE	Perles Report	Poaceae	Poa nemoralis	41146	Native	
90	HAFE	Station	Poaceae	Poa pratensis	41088	Introduced	
91	HAFE	Wlk_Rte	Poaceae	Poa sylvestris	41162	Native	
92	HAFE	Station	Poaceae	Poa trivialis	41163	Introduced	
93	HAFE	Wlk_Rte	Cyperaceae	Schoenoplectus pungens	508146	Native	X

94	HAFE	Wlk_Rte	Cyperaceae	Schoenoplectus tabernaemontani	507797	Native
95	HAFE	Station	Cyperaceae	Scirpus georgianus	40259	Native
96	HAFE	Wlk_Rte	Poaceae	Secale cereale	42090	Introduced
97	HAFE	Wlk_Rte	Poaceae	Setaria faberi	41244	Introduced
98	HAFE	Wlk_Rte	Poaceae	Setaria parviflora	505191	Native
99	HAFE	Wlk_Rte	Poaceae	Setaria viridis	41231	Introduced
100	HAFE	Station	Poaceae	Sorghastrum nutans	42102	Native
101	HAFE	Station	Poaceae	Sphenopholis intermedia	505324	Native
102	HAFE	Station	Poaceae	Sphenopholis obtusata	41279	Native
103	HAFE	Perles Report	Poaceae	Sporobolus compositus	507182	Native
104	HAFE	Wlk_Rte	Poaceae	Tridens flavus	42227	Native
105	HAFE	Wlk_Rte	Poaceae	Triticum aestivum	42237	Introduced
106	HAFE	Station	Poaceae	Vulpia octoflora	42264	Native

[1] Source refers to the sampling protocol used to identify species. Stations were selected to represent different habitats within the park. Fifteen minutes of search time was allocated for each station (time was stopped for species identification). At the end of 15 minutes, time was added in 3-min increments until no new species were sampled. Walk-throughs (Wlk_Rte) were also conducted in different areas of the park to increase the chance of finding more cryptic species. Species are added to the list that were recorded by S. Perles in 2007 (Perles Report).

[2] TSN is a unique identifier number given to all species by the Integrated Taxonomic Information System (ITIS). When the taxonomy of a species is still in flux, no number may be provided. ITIS also provides information on the nativeness (native or introduced) of a species.

[3] Indicated are vouchers (X) that were collected by the current inventory.

Species List of Manassas National Battlefield

ID	Park	Source[1]	Family	Species	TSN[2]	Nativeness	Voucher[3]
1	MANA	Station	Poaceae	Agrostis gigantea	40414	Introduced	X
2	MANA	Wlk_Rte	Poaceae	Agrostis hyemalis var. scabra		Native	
3	MANA	Station	Poaceae	Agrostis perennans	40423	Native	
4	MANA	Station	Poaceae	Andropogon gerardii	40462	Native	X
5	MANA	Station	Poaceae	Andropogon virginicus	40456	Native	
6	MANA	Station	Poaceae	Anthoxanthum odoratum	41395	Introduced	
7	MANA	Wlk_Rte	Poaceae	Arthraxon hispidus	41445	Introduced	
8	MANA	Station	Poaceae	Brachyelytrum erectum	41527	Native	X
9	MANA	Station	Poaceae	Bromus commutatus	40497	Introduced	
10	MANA	Station	Poaceae	Bromus inermis	40502	Introduced	
11	MANA	Wlk_Rte	Poaceae	Bromus japonicus	40479	Introduced	
12	MANA	Station	Poaceae	Bromus pubescens	40514	Native	
13	MANA	Station	Poaceae	Bromus sterilis	40522	Introduced	
14	MANA	Wlk_Rte	Cyperaceae	Carex aggregata	39483	Native	
15	MANA	Station	Cyperaceae	Carex albicans var. albicans	527064	Native	
16	MANA	Station	Cyperaceae	Carex albolutescens	39371	Native	X
17	MANA	Station	Cyperaceae	Carex amphibola	39491	Native	
18	MANA	Wlk_Rte	Cyperaceae	Carex annectens	39373	Native	X
19	MANA	Station	Cyperaceae	Carex blanda	39379	Native	
20	MANA	Wlk_Rte	Cyperaceae	Carex bushii	39536	Native	
21	MANA	Station	Cyperaceae	Carex cephalophora	39383	Native	
22	MANA	Station	Cyperaceae	Carex conjuncta	39555	Native	
23	MANA	Station	Cyperaceae	Carex digitalis	39576	Native	
24	MANA	Station	Cyperaceae	Carex festucacea	39391	Native	
25	MANA	Station	Cyperaceae	Carex frankii	39393	Native	
26	MANA	Station	Cyperaceae	Carex glaucodea	39616	Native	
27	MANA	Wlk_Rte	Cyperaceae	Carex granularis	39398	Native	
28	MANA	Station	Cyperaceae	Carex grayi	39622	Native	
29	MANA	Wlk_Rte	Cyperaceae	Carex grisea	510206	Native	
30	MANA	Station	Cyperaceae	Carex hirsutella	39636	Native	
31	MANA	Station	Cyperaceae	Carex jamesii	39404	Native	
32	MANA	Station	Cyperaceae	Carex laxiflora	39662	Native	X
33	MANA	Station	Cyperaceae	Carex lupulina	39413	Native	X
34	MANA	Station	Cyperaceae	Carex lurida	39414	Native	X
35	MANA	Wlk_Rte	Cyperaceae	Carex mesochorea	39694	Native	X
36	MANA	Station	Cyperaceae	Carex normalis	39720	Native	X
37	MANA	Station	Cyperaceae	Carex radiata	39778	Native	
38	MANA	Station	Cyperaceae	Carex retroflexa	39782	Native	
39	MANA	Station	Cyperaceae	Carex rosea	39429	Native	
40	MANA	Station	Cyperaceae	Carex spicata	39812	Introduced	X
41	MANA	Station	Cyperaceae	Carex squarrosa	39815	Native	
42	MANA	Station	Cyperaceae	Carex stipata	39434	Native	X
43	MANA	Wlk_Rte	Cyperaceae	Carex straminea	39820	Native	X
44	MANA	Station	Cyperaceae	Carex swanii	39437	Native	
45	MANA	Wlk_Rte	Cyperaceae	Carex tonsa	39846	Native	

46	MANA	Station	Cyperaceae	Carex tribuloides	39438	Native	X
47	MANA	Station	Cyperaceae	Carex typhina	39439	Native	X
48	MANA	Station	Cyperaceae	Carex umbellata	39857	Native	
49	MANA	Station	Cyperaceae	Carex vulpinoidea	39442	Native	
50	MANA	Station	Cyperaceae	Carex willdenowii	39443	Native	
51	MANA	Station	Poaceae	Cinna arundinacea	40583	Native	X
52	MANA	Wlk_Rte	Cyperaceae	Cyperus echinatus	501920	Native	X
53	MANA	Station	Cyperaceae	Cyperus strigosus	39901	Native	
54	MANA	Station	Poaceae	Dactylis glomerata	193446	Introduced	
55	MANA	Station	Poaceae	Danthonia spicata	41642	Native	
56	MANA	Wlk_Rte	Poaceae	Deschampsia flexuosa	40595	Native	
57	MANA	Station	Poaceae	Dichanthelium acuminatum	41646	Native	
58	MANA	Station	Poaceae	Dichanthelium boscii	41655	Native	
59	MANA	Station	Poaceae	Dichanthelium clandestinum	41656	Native	
60	MANA	Station	Poaceae	Dichanthelium commutatum	41647	Native	
61	MANA	Station	Poaceae	Dichanthelium depauperatum	41658	Native	
62	MANA	Station	Poaceae	Dichanthelium dichotomum	41659	Native	
63	MANA	Station	Poaceae	Dichanthelium latifolium	41648	Native	
64	MANA	Wlk_Rte	Poaceae	Dichanthelium laxiflorum	41661	Native	X
65	MANA	Station	Poaceae	Dichanthelium sphaerocarpon	41671	Native	X
66	MANA	Station	Poaceae	Dichanthelium villosissimum	502040	Native	
67	MANA	Wlk_Rte	Poaceae	Digitaria ischaemum	40637	Introduced	
68	MANA	Wlk_Rte	Poaceae	Echinochloa crus-galli	502210	Introduced	
69	MANA	Station	Poaceae	Echinochloa muricata	40672	Native	
70	MANA	Station	Cyperaceae	Eleocharis tenuis	40070	Native	X
71	MANA	Wlk_Rte	Poaceae	Eleusine indica	41692	Introduced	
72	MANA	Station	Poaceae	Elymus hystrix	40698	Native	
73	MANA	Station	Poaceae	Elymus repens	512839	Introduced	
74	MANA	Station	Poaceae	Elymus virginicus	40681	Native	
75	MANA	Station	Poaceae	Festuca rubra	40796	Native	
76	MANA	Station	Poaceae	Festuca subverticillata	502612	Native	
77	MANA	Station	Poaceae	Glyceria septentrionalis	40840	Native	X
78	MANA	Station	Poaceae	Glyceria striata	40833	Native	
79	MANA	Station	Poaceae	Holcus lanatus	41773	Introduced	
80	MANA	Wlk_Rte	Juncaceae	Juncus acuminatus	39221	Native	
81	MANA	Station	Juncaceae	Juncus brachycarpus	39226	Native	X
82	MANA	Wlk_Rte	Juncaceae	Juncus canadensis	39228	Native	X
83	MANA	Station	Juncaceae	Juncus effusus	39232	Native	
84	MANA	Station	Juncaceae	Juncus tenuis	39243	Native	
85	MANA	Station	Poaceae	Leersia virginica	40890	Native	
86	MANA	Station	Poaceae	Lolium arundinaceum	507979	Introduced	
87	MANA	Station	Poaceae	Lolium perenne	40893	Introduced	
88	MANA	Wlk_Rte	Poaceae	Lolium pratense	507983	Introduced	
89	MANA	Wlk_Rte	Juncaceae	Luzula echinata	39342	Native	
90	MANA	Wlk_Rte	Juncaceae	Luzula multiflora	39333	Native	
91	MANA	Wlk_Rte	Poaceae	Melica mutica	41858	Native	X
92	MANA	Station	Poaceae	Microstegium vimineum	503829	Introduced	
93	MANA	Wlk_Rte	Poaceae	Miscanthus sinensis	41874	Introduced	

94	MANA	Station	Poaceae	Muhlenbergia schreberi	41939	Native	
95	MANA	Station	Poaceae	Panicum anceps	40904	Native	X
96	MANA	Station	Poaceae	Panicum rigidulum	40956	Native	
97	MANA	Station	Poaceae	Panicum virgatum	40913	Native	
98	MANA	Station	Poaceae	Paspalum laeve	41024	Native	
99	MANA	Station	Poaceae	Phleum pratense	41062	Introduced	
100	MANA	Wlk_Rte	Poaceae	Poa annua	41107	Introduced	
101	MANA	Wlk_Rte	Poaceae	Poa autumnalis	41111	Native	X
102	MANA	Station	Poaceae	Poa compressa	41082	Introduced	
103	MANA	Wlk_Rte	Poaceae	Poa cuspidata	41122	Native	
104	MANA	Station	Poaceae	Poa pratensis	41088	Introduced	
105	MANA	Station	Poaceae	Poa trivialis	41163	Introduced	
106	MANA	Station	Poaceae	Schizachyrium scoparium var. scoparium	530264	Native	X
107	MANA	Station	Cyperaceae	Scirpus cyperinus	40228	Native	
108	MANA	Station	Cyperaceae	Scirpus georgianus	40259	Native	
109	MANA	Station	Cyperaceae	Scirpus pendulus	40273	Native	
110	MANA	Station	Poaceae	Setaria faberi	41244	Introduced	
111	MANA	Wlk_Rte	Poaceae	Setaria parviflora	505191	Native	
112	MANA	Station	Poaceae	Setaria viridis	41231	Introduced	
113	MANA	Station	Poaceae	Sorghastrum nutans	42102	Native	X
114	MANA	Station	Poaceae	Sphenopholis intermedia	505324	Native	
115	MANA	Wlk_Rte	Poaceae	Sphenopholis obtusata	41279	Native	
116	MANA	Station	Poaceae	Tridens flavus	42227	Native	
117	MANA	Station	Poaceae	Tripsacum dactyloides	41287	Native	
118	MANA	Wlk_Rte	Poaceae	Vulpia myuros	42263	Introduced	
119	MANA	Wlk_Rte	Poaceae	Vulpia octoflora	42264	Native	

[1] Source refers to the sampling protocol used to identify species. Stations were selected to represent different habitats within the park. Fifteen minutes of search time was allocated for each station (time was stopped for species identification). At the end of 15 minutes, time was added in 3-min increments until no new species were sampled. Walk-throughs (Wlk_Rte) were also conducted in different areas of the park to increase the chance of finding more cryptic species.

[2] TSN is a unique identifier number given to all species by the Integrated Taxonomic Information System (ITIS). When the taxonomy of a species is still in flux, no number may be provided. ITIS also provides information on the nativeness (native or introduced) of a species.

[3] Indicated are vouchers (X) that were collected by the current inventory.

Species List of National Capital Parks East

ID	Park	Source[1]	Family	Species	TSN[2]	Nativeness	Voucher[3]
1	NACE	Station	Poaceae	Agrostis gigantea	40414	Introduced	
2	NACE	Station	Poaceae	Agrostis perennans	40423	Native	X
3	NACE	Station	Poaceae	Aira caryophyllea	41376	Introduced	X
4	NACE	MRC Herbarium	Poaceae	Alopecurus carolinianus	40440	Native	MRC-ANAC 49
5	NACE	Station	Poaceae	Andropogon virginicus	40456	Native	
6	NACE	Station	Poaceae	Anthoxanthum odoratum	41395	Introduced	
7	NACE	Station	Poaceae	Arthraxon hispidus	41445	Introduced	
8	NACE	MRC Herbarium	Poaceae	Avena sativa	41459	Introduced	MRC-ANAC 34
9	NACE	Wlk_Rte	Poaceae	Bromus catharticus	501066	Introduced	
10	NACE	Station	Poaceae	Bromus commutatus	40497	Introduced	
11	NACE	MRC Herbarium	Poaceae	Bromus hordeaceus	501070	Introduced	MRC-FOCE 8493
12	NACE	Station	Poaceae	Bromus inermis	40502	Introduced	
13	NACE	Station	Poaceae	Bromus sterilis	40522	Introduced	
14	NACE	Station	Cyperaceae	Carex aggregata	39483	Native	
15	NACE	Station	Cyperaceae	Carex albicans var. albicans	527064	Native	
16	NACE	Station	Cyperaceae	Carex albolutescens	39371	Native	X
17	NACE	Station	Cyperaceae	Carex amphibola	39491	Native	
18	NACE	Station	Cyperaceae	Carex annectens	39373	Native	X
19	NACE	Station	Cyperaceae	Carex atlantica ssp. atlantica	523747	Native	X
20	NACE	MRC Herbarium	Cyperaceae	Carex atlantica ssp. capillacea	523748	Native	MRC-OXRN 93
21	NACE	Station	Cyperaceae	Carex blanda	39379	Native	
22	NACE	MRC Herbarium	Cyperaceae	Carex brevior	39451	Native	MRC-OXCO 212
23	NACE	Station	Cyperaceae	Carex bushii	39536	Native	
24	NACE	Wlk_Rte	Cyperaceae	Carex cephalophora	39383	Native	
25	NACE	Station	Cyperaceae	Carex conjuncta	39555	Native	
26	NACE	Station	Cyperaceae	Carex crinita	39385	Native	
27	NACE	Station	Cyperaceae	Carex debilis	39572	Native	X
28	NACE	Station	Cyperaceae	Carex festucacea	39391	Native	
29	NACE	Station	Cyperaceae	Carex folliculata	39392	Native	
30	NACE	Station	Cyperaceae	Carex frankii	39393	Native	
31	NACE	Station	Cyperaceae	Carex glaucodea	39616	Native	
32	NACE	Wlk_Rte	Cyperaceae	Carex granularis	39398	Native	
33	NACE	Station	Cyperaceae	Carex hirsutella	39636	Native	
34	NACE	Station	Cyperaceae	Carex hirta	39637	Introduced	
35	NACE	Station	Cyperaceae	Carex intumescens	39403	Native	
36	NACE	MRC Herbarium	Cyperaceae	Carex lacustris	39409	Native	MRC-KEAQ 2069
37	NACE	Station	Cyperaceae	Carex laxiculmis	39411	Native	
38	NACE	Wlk_Rte	Cyperaceae	Carex leavenworthii	39663	Native	X
39	NACE	Station	Cyperaceae	Carex longii	501240	Native	
40	NACE	Station	Cyperaceae	Carex lupulina	39413	Native	
41	NACE	Station	Cyperaceae	Carex lurida	39414	Native	
42	NACE	Station	Cyperaceae	Carex normalis	39720	Native	X
43	NACE	Station	Cyperaceae	Carex pensylvanica	39749	Native	
44	NACE	Station	Cyperaceae	Carex radiata	39778	Native	
45	NACE	Station	Cyperaceae	Carex rosea	39429	Native	X

46	NACE	MRC Herbarium	Cyperaceae	Carex scoparia	39432	Native	MRC-KEAQ	1992
47	NACE	Station	Cyperaceae	Carex seorsa	39433	Native	X	
48	NACE	Station	Cyperaceae	Carex stipata	39434	Native		
49	NACE	Station	Cyperaceae	Carex stipata var. stipata	527159	Native		
50	NACE	Station	Cyperaceae	Carex stricta	39435	Native	X	
51	NACE	Station	Cyperaceae	Carex swanii	39437	Native		
52	NACE	Station	Cyperaceae	Carex tribuloides	39438	Native		
53	NACE	Station	Cyperaceae	Carex typhina	39439	Native		
54	NACE	Station	Cyperaceae	Carex vulpinoidea	39442	Native		
55	NACE	Station	Cyperaceae	Carex willdenowii	39443	Native		
56	NACE	Station	Poaceae	Cinna arundinacea	40583	Native		
57	NACE	Station	Poaceae	Cynodon dactylon	41619	Introduced		
58	NACE	MRC Herbarium	Cyperaceae	Cyperus acuminatus	39883	Native	MRC-KEAQ	1985
59	NACE	MRC Herbarium	Cyperaceae	Cyperus bipartitus	501914	Native	MRC-ANAC	23
60	NACE	Station	Cyperaceae	Cyperus difformis	39915	Introduced	X	
61	NACE	Station	Cyperaceae	Cyperus erythrorhizos	39891	Native	X	
62	NACE	Station	Cyperaceae	Cyperus flavescens	39891	Native	X	
63	NACE	Station	Cyperaceae	Cyperus odoratus	39894	Native		
64	NACE	MRC Herbarium	Cyperaceae	Cyperus squarrosus	501940	Native	MRC-ANAC	25
65	NACE	MRC Herbarium	Cyperaceae	Cyperus strigosus	39901	Native	MRC-KEAQ	1976
66	NACE	Station	Poaceae	Dactylis glomerata	193446	Introduced		
67	NACE	Station	Poaceae	Danthonia spicata	41642	Native		
68	NACE	Station	Poaceae	Dichanthelium clandestinum	41656	Native		
69	NACE	Station	Poaceae	Dichanthelium depauperatum	41658	Native		
70	NACE	Station	Poaceae	Dichanthelium dichotomum	41659	Native		
71	NACE	Station	Poaceae	Dichanthelium dichotomum var. ensifolium	527692	Native		
72	NACE	Station	Poaceae	Dichanthelium sphaerocarpon	41671	Native	X	
73	NACE	Station	Poaceae	Dichanthelium sphaerocarpon var. isophyllum	527701	Native		
74	NACE	Station	Poaceae	Dichanthelium villosissimum	502040	Native		
75	NACE	Station	Poaceae	Digitaria sanguinalis	40604	Native		
76	NACE	Station	Poaceae	Echinochloa crus-galli	502210	Introduced		
77	NACE	Station	Poaceae	Echinochloa muricata	40672	Native		
78	NACE	MRC Herbarium	Poaceae	Echinochloa walteri	40669	Native	MRC-KEAQ	1980
79	NACE	Station	Poaceae	Eleusine indica	41692	Introduced		
80	NACE	Station	Poaceae	Elymus hystrix	40698	Native		
81	NACE	Station	Poaceae	Elymus repens	512839	Introduced		
82	NACE	Station	Poaceae	Elymus villosus	40714	Native		
83	NACE	Station	Poaceae	Elymus virginicus	40681	Native		
84	NACE	MRC Herbarium	Poaceae	Eragrostis curvula	502340	Introduced	MRC-OXCO	201
85	NACE	MRC Herbarium	Poaceae	Eragrostis pectinacea	40723	Native	MRC-KEAQ	1977
86	NACE	MRC Herbarium	Poaceae	Eriochloa contracta	41724	Native	MRC-ANAC	36
87	NACE	Station	Poaceae	Festuca rubra	40796	Native		
88	NACE	Station	Poaceae	Festuca subverticillata	502612	Native		
89	NACE	MRC Herbarium	Poaceae	Festuca trachyphylla	502613	Introduced	MRC-KEAQ	2072
90	NACE	Station	Poaceae	Glyceria septentrionalis	40840	Native		
91	NACE	Station	Poaceae	Glyceria striata	40833	Native		
92	NACE	Station	Poaceae	Holcus lanatus	41773	Introduced		
93	NACE	Station	Juncaceae	Juncus acuminatus	39221	Native	X	

94	NACE	Station	Juncaceae	Juncus effusus	39232	Native	
95	NACE	Station	Juncaceae	Juncus tenuis	39243	Native	
96	NACE	Station	Cyperaceae	Kyllinga gracillima	507039	Native	X
97	NACE	Station	Poaceae	Leersia oryzoides	40886	Native	
98	NACE	Station	Poaceae	Leersia virginica	40890	Native	
99	NACE	MRC Herbarium	Poaceae	Leptochloa fusca ssp fascicularis	566046	Native	MRC-ANAC 37
100	NACE	Station	Poaceae	Lolium arundinaceum	507979	Introduced	
101	NACE	Station	Poaceae	Lolium perenne	40893	Introduced	
102	NACE	Station	Juncaceae	Luzula echinata	39342	Native	X
103	NACE	Station	Juncaceae	Luzula multiflora	39333	Native	
104	NACE	Station	Poaceae	Microstegium vimineum	503829	Introduced	
105	NACE	Station	Poaceae	Miscanthus sinensis	41874	Introduced	
106	NACE	Station	Poaceae	Muhlenbergia schreberi	41939	Native	
107	NACE	MRC Herbarium	Poaceae	Panicum dichotomiflorum	40908	Native	MRC-KEAQ 1964
108	NACE	Station	Poaceae	Paspalum dilatatum	40997	Introduced	
109	NACE	Station	Poaceae	Phalaris arundinacea	41335	Native	
110	NACE	Station	Poaceae	Phleum pratense	41062	Introduced	
111	NACE	Station	Poaceae	Phragmites australis	41072	Native	
112	NACE	Station	Poaceae	Phyllostachys bambusoides	504357	Introduced	
113	NACE	Station	Poaceae	Poa annua	41107	Introduced	
114	NACE	Station	Poaceae	Poa compressa	41082	Introduced	
115	NACE	Station	Poaceae	Poa pratensis	41088	Introduced	
116	NACE	Station	Poaceae	Poa trivialis	41163	Introduced	
117	NACE	MRC Herbarium	Poaceae	Saccharum ravennae	504934	Introduced	MRC-ANAC 35
118	NACE	MRC Herbarium	Cyperaceae	Schoenoplectus fluviatilis	40231	Native	MRC-KEAQ 1983
119	NACE	MRC Herbarium	Cyperaceae	Schoenoplectus pungens	508146	Native	MRC-KEAQ 1959
120	NACE	MRC Herbarium	Cyperaceae	Schoenoplectus purshianus	507792	Native	MRC-KEAQ 1975
121	NACE	Station	Cyperaceae	Schoenoplectus tabernaemontani	507797	Native	
122	NACE	Station	Cyperaceae	Scirpus cyperinus	40228	Native	
123	NACE	Station	Cyperaceae	Scirpus georgianus	40259	Native	
124	NACE	Wlk_Rte	Cyperaceae	Scirpus pendulus	40273	Native	
125	NACE	Station	Cyperaceae	Scirpus polyphyllus	40274	Native	
126	NACE	MRC Herbarium	Poaceae	Setaria italica	41248	Introduced	MRC-OXCO 202
127	NACE	Station	Poaceae	Setaria parviflora	505191	Native	
128	NACE	Station	Poaceae	Setaria viridis	41231	Introduced	
129	NACE	Station	Poaceae	Sphenopholis intermedia	505324	Native	
130	NACE	Station	Poaceae	Sphenopholis obtusata	41279	Native	
131	NACE	MRC Herbarium	Poaceae	Sporobolus vaginiflorus	42126	Native	MRC-GREE 7
132	NACE	Station	Poaceae	Vulpia myuros	42263	Introduced	

[1] Source refers to the sampling protocol used to identify species. Stations were selected to represent different habitats within the park. Fifteen minutes of search time was allocated for each station (time was stopped for species identification). At the end of 15 minutes, time was added in 3-min increments until no new species were sampled. Walk-throughs (Wlk_Rte) were also conducted in different areas of the park to increase the chance of finding more cryptic species. Species not sampled by the survey in the field but that exist as vouchers in the MRC Herbarium are added to the species list as they represent additional species that are known to occur in the park.

[2] TSN is a unique identifier number given to all species by the Integrated Taxonomic Information System (ITIS). When the taxonomy of a species is still in flux, no number may be provided. ITIS also provides information on the nativeness (native or introduced) of a species.

[3] Indicated are vouchers (X) that were collected by the current inventory and that exist as vouchers in the MRC Herbarium.

Species List of Rock Creek Park

ID	Park	Source[1]	Family	Species	TSN[2]	Nativeness	Voucher[3]
1	ROCR	Station	Poaceae	Agrostis gigantea	40414	Introduced	
2	ROCR	Station	Poaceae	Anthoxanthum odoratum	41395	Introduced	
3	ROCR	Wlk_Rte	Poaceae	Bromus catharticus	501066	Introduced	
4	ROCR	Wlk_Rte	Poaceae	Bromus inermis	40502	Introduced	
5	ROCR	Wlk_Rte	Cyperaceae	Carex albicans var. albicans	527064	Native	
6	ROCR	Station	Cyperaceae	Carex amphibola	39491	Native	
7	ROCR	Wlk_Rte	Cyperaceae	Carex annectens	39373	Native	
8	ROCR	Station	Cyperaceae	Carex blanda	39379	Native	
9	ROCR	Station	Cyperaceae	Carex cephalophora	39383	Native	
10	ROCR	Station	Cyperaceae	Carex digitalis	39576	Native	
11	ROCR	Wlk_Rte	Cyperaceae	Carex digitalis var. digitalis	39576	Native	
12	ROCR	Station	Cyperaceae	Carex frankii	39393	Native	
13	ROCR	Wlk_Rte	Cyperaceae	Carex glaucodea	39616	Native	X
14	ROCR	Wlk_Rte	Cyperaceae	Carex grisea	510206	Native	
15	ROCR	Wlk_Rte	Cyperaceae	Carex hirsutella	39636	Native	
16	ROCR	Station	Cyperaceae	Carex hirtifolia	39638	Native	X
17	ROCR	Engelhardt Report	Cyperaceae	Carex laevivaginata	39410	Native	
18	ROCR	Wlk_Rte	Cyperaceae	Carex laxiculmis	39411	Native	X
19	ROCR	Wlk_Rte	Cyperaceae	Carex laxiflora	39662	Native	
20	ROCR	Wlk_Rte	Cyperaceae	Carex leavenworthii	39663	Native	
21	ROCR	Station	Cyperaceae	Carex lurida	39414	Native	
22	ROCR	Station	Cyperaceae	Carex nigromarginata	39719	Native	
23	ROCR	Wlk_Rte	Cyperaceae	Carex pensylvanica	39749	Native	
24	ROCR	Wlk_Rte	Cyperaceae	Carex platyphylla	39761	Native	
25	ROCR	Station	Cyperaceae	Carex radiata	39778	Native	
26	ROCR	Wlk_Rte	Cyperaceae	Carex rosea	39429	Native	
27	ROCR	Station	Cyperaceae	Carex squarrosa	39815	Native	
28	ROCR	Station	Cyperaceae	Carex swanii	39437	Native	
29	ROCR	Station	Cyperaceae	Carex tribuloides	39438	Native	
30	ROCR	Wlk_Rte	Cyperaceae	Carex virescens	39867	Native	
31	ROCR	Station	Cyperaceae	Carex vulpinoidea	39442	Native	
32	ROCR	Station	Cyperaceae	Carex willdenowii	39443	Native	
33	ROCR	Station	Poaceae	Dactylis glomerata	193446	Introduced	
34	ROCR	Station	Poaceae	Danthonia spicata	41642	Native	
35	ROCR	Wlk_Rte	Poaceae	Dichanthelium boscii	41655	Native	
36	ROCR	Station	Poaceae	Dichanthelium clandestinum	41656	Native	
37	ROCR	Wlk_Rte	Poaceae	Dichanthelium dichotomum	41659	Native	
38	ROCR	Wlk_Rte	Poaceae	Dichanthelium latifolium	41648	Native	
39	ROCR	Wlk_Rte	Poaceae	Dichanthelium villosissimum	502040	Native	X
40	ROCR	Engelhardt Report	Poaceae	Digitaria sanguinalis	40604	Native	
41	ROCR	Wlk_Rte	Poaceae	Echinochloa crus-galli	502210	Introduced	
42	ROCR	Wlk_Rte	Poaceae	Eleusine indica	41692	Introduced	
43	ROCR	Wlk_Rte	Poaceae	Elymus hystrix	40698	Native	
44	ROCR	Station	Poaceae	Elymus repens	512839	Introduced	
45	ROCR	Wlk_Rte	Poaceae	Elymus riparius	40706	Native	

46	ROCR	Station	Poaceae	Elymus virginicus	40681	Native	
47	ROCR	Station	Poaceae	Festuca subverticillata	502612	Native	
48	ROCR	Station	Poaceae	Glyceria striata	40833	Native	
49	ROCR	Station	Juncaceae	Juncus effusus	39232	Native	
50	ROCR	Station	Juncaceae	Juncus tenuis	39243	Native	
51	ROCR	Wlk_Rte	Poaceae	Leersia virginica	40890	Native	
52	ROCR	Station	Poaceae	Lolium arundinaceum	507979	Introduced	
53	ROCR	Station	Poaceae	Lolium perenne	40893	Introduced	
54	ROCR	Station	Poaceae	Lolium pratense	507983	Introduced	
55	ROCR	Station	Juncaceae	Luzula echinata	39342	Native	
56	ROCR	Engelhardt Report	Juncaceae	Luzula luzuloides	39344	Introduced	X
57	ROCR	Wlk_Rte	Juncaceae	Luzula multiflora	39333	Native	
58	ROCR	Station	Poaceae	Melica mutica	41858	Native	
59	ROCR	Station	Poaceae	Microstegium vimineum	503829	Introduced	
60	ROCR	Wlk_Rte	Poaceae	Muhlenbergia schreberi	41939	Native	
61	ROCR	Wlk_Rte	Poaceae	Panicum dichotomiflorum	40908	Native	
62	ROCR	Station	Poaceae	Panicum miliaceum	40946	Introduced	X
63	ROCR	Station	Poaceae	Phleum pratense	41062	Introduced	
64	ROCR	Station	Poaceae	Poa annua	41107	Introduced	
65	ROCR	Station	Poaceae	Poa pratensis	41088	Introduced	
66	ROCR	Station	Poaceae	Poa trivialis	41163	Introduced	
67	ROCR	Wlk_Rte	Cyperaceae	Scirpus georgianus	40259	Native	
68	ROCR	Wlk_Rte	Poaceae	Sphenopholis obtusata	41279	Native	

[1] Source refers to the sampling protocol used to identify species. Stations were selected to represent different habitats within the park. Fifteen minutes of search time was allocated for each station (time was stopped for species identification). At the end of 15 minutes, time was added in 3-min increments until no new species were sampled. Walk-throughs (Wlk_Rte) were also conducted in different areas of the park to increase the chance of finding more cryptic species. Species are added to the list that were recorded by K. Engelhardt in 2003 and 2004 (Engelhardt Report).

[2] TSN is a unique identifier number given to all species by the Integrated Taxonomic Information System (ITIS). When the taxonomy of a species is still in flux, no number may be provided. ITIS also provides information on the nativeness (native or introduced) of a species.

[3] Indicated are vouchers (X) that were collected by the current inventory or by Engelhardt 2005.

The U.S. Department of the Interior (DOI) is the nation's principal conservation agency, charged with the mission "*to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian tribes and our commitments to island communities."* More specifically, Interior protects America's treasures for future generations, provides access to our nation's natural and cultural heritage, offers recreation opportunities, honors its trust responsibilities to American Indians and Alaska Natives and its responsibilities to island communities, conducts scientific research, provides wise stewardship of energy and mineral resources, fosters sound use of land and water resources, and conserves and protects fish and wildlife. The work that we do affects the lives of millions of people; from the family taking a vacation in one of our national parks to the children studying in one of our Indian schools.

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National Park Service
U.S. Department of the Interior

Natural Resource Program Center
Fort Collins, Colorado

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